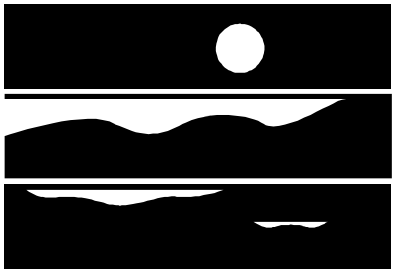

Regulation of Dangerous Wastes Being Recycled

Washington State Department of Ecology
Hazardous Waste and Toxics Reduction Program
P.O. Box 47600
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Prepared by

Washington State Department of Ecology
Hazardous Waste and Toxics Reduction Program

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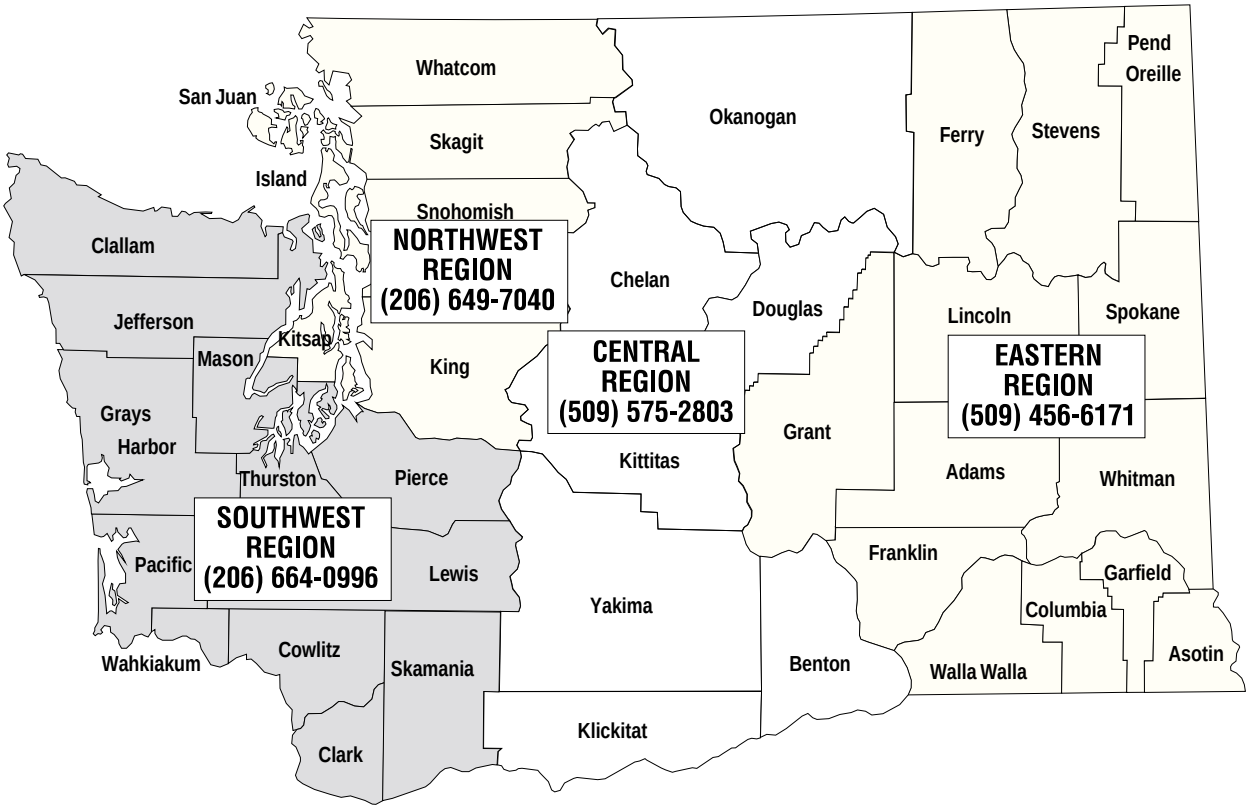
Introduction

Recycling is an important tool in managing dangerous waste. As the role of recycling in waste management grows, regulatory decisions involving recycling become more frequent.

This document is designed to be an aid in identifying regulated recycling operations, and in using those sections of Chapter 173-303 WAC that pertain to recycling. It is more of a pocket guide than an exhaustive reference; it will not be able to answer all of the questions that will arise. This guidance should not be used in place of the regulations, which should be consulted as the final authority.

The Department of Ecology wants to help you understand and comply with the law. We're here to answer your questions. Contact the Hazardous Waste and Toxics Reduction Program in your region for assistance. Ask for a Hazardous Waste Specialist if you are uncertain about your responsibilities as a hazardous waste generator or to request a copy of the regulations.

State of Washington
Department of Ecology Regional Offices



Chapter One: General Definitions

WAC 173-303-040

By-product refers to a material that is not one of the primary products of a production process, and is not solely or separately produced by the production process. Examples include process residues such as slags or distillation column bottoms. The term does not include a co-product. A co-product is produced for the general public's use, and is ordinarily used in the form in which it is produced by the process.

Commercial chemical product or manufacturing chemical intermediate refers to a chemical substance which is manufactured or formulated for commercial or manufacturing purposes. It can consist of the commercially pure grade of the chemical, any technical grades of the chemical produced or marketed, and all formulations in which the chemical is the only active ingredient.

Reclamation is defined as the processing of a material in order to recover useable products or to regenerate the material. Reclamation differs from Treatment-By-Generator (TBG) in that TBG treats a waste but does not recover useable products or regenerate the material.

Recycle means to use, reuse, or reclaim a material.

Reuse or use means to employ a material either as an ingredient in an industrial process to make a product, or as an effective substitute for a commercial product. A material is not reused or used if distinct components of the material are recovered as separate end products.

Scrap metal refers to bits and pieces of metal parts (*e.g.*, bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

Secondary materials are: spent materials; discarded commercial chemical products; "listed" by-products; "listed" sludges; characteristic or criteria by-products and sludges; and scrap metal.

Sludge refers a solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility. This term does not include the treated effluent from a wastewater treatment plant.

Speculative accumulation refers a material is accumulated with the intent to recycle, but cannot be shown to have a feasible means of being recycled. Unless the material has a minimum yearly turnover rate as defined in WAC 173-303-016(5)(d), it is speculatively accumulated.

Spent material means any material that has been used and, as a result of contamination, can no longer serve the purpose for which it was produced without processing.

Chapter Two: Is It a Dangerous Waste?

WAC 173-303-070 and -016

A material is a dangerous waste if it qualifies as a solid waste, and it exhibits a hazardous characteristic, criteria, or is listed, as described in WAC 173-303-070.

A material is a solid waste if it is:

a) Applied to or placed on the land (see Chapter 8 of this manual for exceptions).

b) Burned to recover energy.

c) Accumulated speculatively, as defined in WAC 173-303-016(5)(d)(ii), except for commercial chemical products. Variances can be issued on a case-by-case basis. Refer to WAC 173-303-017(5) and (7).

d) Contained in or used to produce a fuel.

e) Dioxin-containing waste F020 and F021, unless used as an ingredient to make a product at the site of generation; dioxin-containing wastes F022, F026, and F028 when they are recycled in any manner [WAC 173-303-016(6)].

f) Any material Ecology determines is being used, accumulated, reused, or handled in a manner that poses a threat to public health or the environment.

g) Other materials determined by Ecology to be inherently waste-like, and pose a substantial hazard to human health or the environment [WAC 173-303-016(6)(b)]. This may apply to recycled constituents not normally present in raw materials (see "Constituents along for the ride," Chapter 11, Number 4).

h) Reclaimed under certain conditions (see Chapters 5, 6, and Attachment 3).

It is possible for a particular generator or group of generators to add wastes to this list by petitioning to have their dangerous wastes exempted or excluded (WAC 173-303-072 and -910). Exclusions are usually considered when a material can be shown to be more like a usable product than a waste, can be shown to be generally non-hazardous, or is regulated under another law. The following materials are not regulated under the Dangerous Waste Regulations, except for provisions which deal with Ecology cleanup authority, spills and discharges, and imminent threats to health or the environment (WAC 173-303-050, -145, and -960).

- Used oil that is hazardous, if it is recycled. (Does not include used oil that is burned for energy recovery or placed on the ground, or that has been mixed with a listed waste.)
- Recycled chlorofluorocarbons (CFCs).
- Recycled scrap metals.
- Household wastes, as defined in WAC 173-303-071(3)(c).
- Reclaimed industrial ethyl alcohol.

- Domestic sewage, and any mixture of domestic sewage and other wastes that passes through a sewer system to a Publicly Owned Treatment Works (POTW) for treatment provided certain conditions are met.

- Industrial wastewater discharges that are point source discharges subject to the National Pollution Discharge Elimination System (NPDES) permits under the Clean Water Act. Collection, storage, or treatment of industrial waste waters prior to discharge is regulated, as are sludges that are generated during industrial waste water treatment.

  All designated waste waters must be reported prior to treatment as well as all designated treatment sludges.

- Agricultural crops and animal manures returned to the soil as fertilizer.

- Pulping liquors reclaimed in a pulping liquor recovery furnace and then reused in the pulping process.

- Asphaltic materials designated only for the presence of polycyclic aromatic hydrocarbons (PAHs) when used for the material's intended purpose (e.g., roads, dikes, paving).

- Roofing tars and shingles unless they exhibit any of the dangerous waste characteristics listed in WAC 173-303-090 or are mixed with wastes listed in WAC 173-303-81 or -082.

- Wood waste or wood products treated with preservatives, if certain conditions are met [WAC 173-303-071(2)(g)].

- Wood ash that would designate solely for corrosivity under WAC 173-303-090(6)(a)(iii).

- Irrigation return flows.

- Materials subjected to in-situ mining techniques which are not removed from the ground during extraction.

- Mining overburden returned to the mining site.

- Polychlorinated biphenyl (PCB) wastes when regulated under federal Toxic Substance Control Act (TSCA) rules, or less than one or two ppm concentration depending on test method.

- Samples for testing and treatability studies (specific conditions govern this exclusion).

- Petroleum contaminated media and debris having toxicity characteristics for organics, under WAC 173-303-090(8), only if generated as a result of the Underground Storage Tank (UST) corrective action regulations under 40 CFR Part 280.

- Special incinerator ash (from burning municipal solid waste).

- Dangerous waste generated in a product or raw material storage tank, transport vehicle or vessel, pipeline, or in a manufacturing process unit or an associated nonwaste-treatment-manufacturing unit until the waste leaves the unit.

- Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (specific limitations govern this exclusion).

- Spent pickle liquor which is reused in waste water treatment at a facility with an NPDES permit.

- Spent sulfuric acid used to produce virgin sulfuric acid.

- Refinery and coke materials exempted from regulation by WAC 173-303-120(2)(a)(v), (vi), (vii), (viii), and (ix).

  — Fuel, product, or unused oil (and normal process streams) produced from the refining of oil-bearing hazardous wastes from normal petroleum refining, production, and transportation practices; or when re-introduced into the refining process at the refinery.

  — Coke and coal tar from the iron and steel industry that contains dangerous waste from the iron and steel production process.

  — Oil when reclaimed from oil-bearing hazardous wastes produced from oil refining, as long as the fuel meets the used oil fuel specifications and other specific parameters.

  — Petroleum coke produced from petroleum refinery hazardous wastes at the same facility where the waste is generated, unless the coke exceeds a characteristic level set out in WAC 173-303-090.

Chapter Three: Specially Regulated Recyclable Materials

The following recyclable materials are regulated under their own respective sections of Chapter 173-303 WAC:

- Spent lead acid batteries that are being reclaimed, [WAC 173-303-520].
- Materials from which precious metals are reclaimed, [WAC 173-303-525].
- Dangerous waste fuels burned for energy recovery, [WAC 173-303-510].
- Used oil burned for energy recovery, [WAC 173-30-515].
- Land application of hazardous secondary materials, see Chapter 7 of this manual. [WAC 173-303-505].
- "State only" dangerous wastes that are recycled, [WAC 173-303-500].

Chapter Four: Recyclable Materials That Are Not Regulated

WAC 173-303-017(2)

Materials that are not reclaimed prior to use, reuse, or returned to the original process, are not considered solid wastes and are not regulated as dangerous wastes.

Recyclable materials are not regulated if they are:

- Used or reused as ingredients in an industrial process to make a product, provided the material is not being reclaimed.
- Used or reused as an effective substitute for commercial products without reclamation.
- Returned to the original process from which it is generated without first being reclaimed. The material must be returned as a substitute for raw materials used as principal feedstocks.

Another case in which material is not regulated is during closed-looped recycling, [WAC 173-303 -071(3)(q). Closed-loop recycling can involve reclamation, but is subject to all of the following conditions:

- Material is returned to the original production processes in which it was generated.
- Only tank storage is involved, and the entire process, through the completion of reclamation, is closed by being entirely connected by pipes or other comparable closed conveyance.
- Reclamation does not involve combustion (e.g. boilers or furnaces).
- The materials are not accumulated for over 12 months without being reclaimed.
- The material is not used to produce a fuel or a product placed on the land.
- Process residues are disposed of within the guidelines of the regulations.

Once a material is reclaimed or regenerated, the useful portion produced from the recycling process is a product rather than a waste. It is no longer regulated as a hazardous waste.

For additional guidance, refer to *Technical Information Memorandum 89-1: Counting Spent Solvents and the Closed-loop Exclusion*.

Chapter Five: Recyclable Materials That Are Fully Regulated

WAC 173-303-017(3) and -120(2)(b)

In general, materials are fully regulated if they are reclaimed. There are several important exceptions to this rule. The following types of materials are not regulated as dangerous wastes when reclaimed:

a) Discarded commercial chemical products, by-products, or sludges exhibiting a dangerous waste characteristic or criteria are not regulated when reclaimed (see Attachments 2 and 3).

b) Materials reclaimed in a closed-loop process (see Chapter 4 of this manual).

c) Materials granted a variance (see Chapter 6 of this manual).

Recyclable materials are also regulated if they are applied to or placed on the land (see Chapter 7 of this manual for exceptions), accumulated speculatively (see Chapter 6 for variances), contain dioxins, or burned for energy recovery.

Dangerous wastes are regulated up to the point when they actually enter the recycling process that recycles the material. That means the accumulation, handling, transport, and storage of the waste prior to the recycling process is subject to the requirements of Chapter 173-303 WAC. Residues resulting from reclamation or other recycling activities that designate as characteristic, criteria or listed dangerous wastes must be handled and disposed of as such. Useful materials resulting from reclamation are not regulated as hazardous wastes.

Regulatory relief can be sought for recyclable materials that are regulated. The following process exists to exempt these materials from regulation under Chapter 173-303 WAC:

a) Make a documented claim that the materials should not be regulated because there is a known market or disposition for the material; or

b) Apply for one of the variances described in Chapter 6 of this manual; or

c) Petition to exempt the material according to WAC 173-303-072 and -910. This would be desirable, for instance, if the recyclable material is a waste "listed" for the characteristic of ignitibility but no longer exhibits this characteristic. Unfortunately, the petition process for delisting takes years and requires the approval of both EPA and Ecology. However, options for faster processing may be considered in the future. For additional guidance, refer to *Guidance on Petitions to Delist Dangerous Wastes*.

Chapter Six: Materials Eligible for a Variance

WAC 173-303-017(5) and (7)

When materials undergo certain types of reclamation processes during recycling, they may be eligible for case-by-case variances. These materials would no longer be regulated as solid or dangerous wastes. In addition, wastes can be issued variances so they are not regulated as dangerous wastes [WAC 173-30-017(5)] if they are:

- Materials reclaimed and then reused in the original primary production process in which they were generated.
- Materials reclaimed but require further reclamation before the material is completely recovered.
- Accumulated speculatively prior to recycling, as defined in WAC 173-303-016(5)(d)ii). Commercial chemical products remain unregulated under Chapter 173-303 WAC when accumulated speculatively.
- "State only" dangerous wastes (wastes not regulated as a hazardous waste by EPA) that serve as an effective substitute for a commercial product or raw material provided certain criteria are met.

Procedures for obtaining variances are listed in WAC 173-303-017(5) and (7).

Chapter Seven: Land Application

WAC 173-303-505

Recycling materials by land application is referred to as "use constituting disposal." Dangerous wastes placed on the land, directly or after mixing with another material, are regulated under Chapter 173-303 WAC. Land application includes, not only use as a fertilizer or soil amendment, but also use in paving or ground cover, and in building materials such as brick, concrete, or fixtures that may come in contact with the ground.

The following exceptions apply:

- Recycled hazardous commercial chemical products are not regulated waste if they are applied to the land and that is their ordinary manner of use; for example, pesticides. WAC 173-303-016(5)(a)(ii)].

- Products sold for the general public's use that are land applied and contain hazardous recyclable materials that have undergone a chemical reaction in the course of producing the product so as to become inseparable by physical means (e.g., will not migrate in the environment).

- Commercial fertilizers containing recyclable materials produced for the general public's use provided they meet land disposal restriction treatment standards or prohibition levels for each recyclable material they contain. [WAC 173-303-040]

Chapter Eight: Regulation of Equipment Versus Material

Recycling equipment and processes are generally exempt from permitting and regulation, unless the process poses a threat to human health or the environment [WAC 173-303-120(4)].

Where recycling equipment and processes are exempt, it is still possible for the material involved to be regulated (see Chapter 5 of this manual).

Chapter Nine: Treatment Versus Reclamation

How do you know if a process is regulated as a treatment or exempt from regulation as recycling? Some recycling processes, such as those used in reclamation, can be similar to those used for the purpose of treating dangerous waste. However, under RCRA and the state dangerous waste regulations, treatment and reclamation are regulated differently.

Treatment is intended to make a waste non-dangerous or less dangerous before final disposal.

Reclamation is done for the purpose of recovering and recycling usable materials.

Legitimate recycling is exempt from permitting and regulation, unless the process poses a threat to human health or the environment [WAC 173-303-120 (4)]. Treatment at dangerous waste facilities (TSDs) is regulated by permit. Persons who treat wastes must have a RCRA permit. However, generators may treat their own waste on-site without a permit if they meet certain standards. **Treatment by generator** is regulated by certain standards which are explained in Ecology's *Technical Information Memorandum 86-3: Treatment by Generators*.

Example: A generator uses filtration to separate liquids from a dangerous waste sludge. The sludge, a dangerous waste, is shipped to a TSD for disposal. The non-hazardous liquid is evaporated. This filtration process is regulated under the standards for treatment by generator. The filtration process is treatment because there are no materials being recycled.

On the other hand, if a regulated spent solvent is filtered so that it can be reused, this filtration process is considered exempt recycling. It is considered exempt recycling, not treatment, because the solvent is being reclaimed.

Chapter Ten: Off-Site Versus On-Site Recycling

When a generator recycles regulated wastes on-site, the wastes are subject to generator requirements such as notification, reporting, labeling, and accumulation time limits. Regulated materials generated and recycled on-site by permitted TSD facilities are subject to generation and TSD requirements including reporting, containment, tank standards, and contingency plans.

Off-site recyclers are subject to special requirements under WAC 173-303-120(4). They must meet storage permit requirements unless the recyclable materials received from off-site are moved into an active recycling process within 24 hours after being received. An active recycling process refers to a dynamic recycling operation that occurs within a recycling unit such as a distillation or centrifuge unit. Active recycling does not include passive, storage-like activities that occur such as when tanks or containers are used for phase separation or for settling impurities.

Off-site recylers who actively process recyclable materials within 24 hours are still subject to some requirements as listed in WAC 173-303-120(4)(c). These include: waste screening and analysis, notification of waste activity, employee training, emergency planning, inspections, manifest tracking, record keeping, and container and tank requirements, including secondary containment. As mentioned above, off-site recyclers who do not actively process recyclable materials within 24 hours are additionally subject to requirements such as full waste analysis and testing, siting criteria, and RCRA/dangerous waste permits [WAC 173-303-120(4)(d)].

Chapter Eleven: "Sham" Recycling

Treatment or disposal posing as recycling is called "sham recycling." It is subject to full regulation and permitting. Regulators use four general criteria when determining whether wastes are being recycled or whether they are treated or disposed of instead. The legitimacy of a recycling operation may be determined by, but not limited to, the following:

1. **Does the end product have value?** One indicator of value might be whether the product can be sold on the open market for general use, or is an effective substitute for a product sold on the open market (see item 3, below). Another, might be whether contracts are in place for purchase of the end product material. This criterion may be difficult to apply when the product is new and innovative, or experimental, since a market may not have been previously established.

   Absence of records regarding the recycling transaction may be an indication of sham recycling. Situations can be viewed with skepticism where secondary materials are ostensibly used and reused, but the generator or recycler is unable to document how, where, and in what volumes the materials are being used and reused. Speculative accumulation, as defined in WAC 173-30-016(5)(d)(ii), can also be an indicator of sham recycling. Where speculative accumulation is a necessary part of a legitimate recycling operation, a variance may be issued [WAC 173-303-017(5)].

2. **Will it harm human health or the environment?** Though this question does not help to differentiate recycling from treatment or disposal, it is a consideration in the approval and regulation of recycling operations. For existing operations, safe and secure handling of the material during recycling to prevent loss to the environment or minimize human exposure is a criterion. The potential for loss or exposure during the actual use of the product is also a consideration.

3. **Is the recycled material effective for the claimed use?** Is it analogous to the raw material or product it replaces? Where a secondary material is ineffective or only marginally effective for the claimed use, the activity may not be recycling but surrogate disposal. The example of certain heavy metal sludges used in concrete is given in the *Federal Register* (page 638, *Federal Register*, January 4, 1985). The example states that unless the sludges contribute "significant elements to the concrete's properties," the activity would not be regarded as legitimate recycling. Effectiveness has sometimes been gauged by whether more of the recycled material must be used than when virgin material is employed for the same purpose.

4. Do the hazardous constituents contribute to the recycling process or are they "**along for the ride**." Such constituents are a part of the waste, but serve no real purpose when the waste is used in a certain application. An example of this is the use of corrosive wastes as neutralizing agents. If the acid or caustic material added is more contaminated than the virgin material, it is likely that the constituents are being disposed of or thrown away, and do not contribute to the recycling process. It is, therefore, unlikely that the application may be viewed as legitimate recycling (*Federal Register*, January 4, 1985).

Chapter Twelve: Case Examples

On-Site Solvent Distillation

Case: Most on-site distillation units (stills) are a stand-alone, batch operation. Used solvent is collected, taken to the still, then the batch of solvent is purified for reuse. For instance, hazardous spent solvent may be collected from parts washers once a week and regenerated in a still. What is the regulatory status of the spent solvent, the still, the reclaimed solvent, and the distillation bottoms?

Analysis: Distillation is an exempt recycling process used to perform reclamation. Spent solvent is a hazardous waste since it must be reclaimed in order to be reused. Reclaimed solvent is a product, not a waste, and is therefore not regulated. Any still bottoms (a solid or semi-solid residue) remaining after solvent distillation are a waste, unless they can be directly reused in some legitimate manner. Also, if the waste bottoms are from a solvent containing listed constituents or exhibit some other hazardous characteristic or criteria, they are a regulated dangerous waste. (see Chapter 5 of this manual.)

Some dry cleaners use new equipment that allows closed-loop rather than batch reclamation and recycling of perchloroethylene cleaning solvent. In this case, the spent solvent is exempt, the process is exempt, and only the contaminated filters, water, and any still bottoms are dangerous wastes. Chapter 5 of this manual and *Technical Information Memorandum 89-1: Counting Spent Solvents and the Closed-Loop Exclusion* outline guidance on "counting" recycled materials to calculate generator quantities.

Off-Site Solvent Recycling

Case: A shop rents a parts washer from an off-site, in-state recycler. The recycler periodically picks up the hazardous spent degreasing solvent for regeneration and subsequent return. The shop generates more than 220 pounds per month of dangerous waste. What is the regulatory status of the spent solvent at the shop? At the off-site recycler?

Analysis: The spent solvent is a hazardous waste until it enters the regeneration unit. The user of the parts cleaner is a regulated waste generator. The solvent is a regulated dangerous waste at the shop, as it is transported, and as it is handled by the solvent reclaimer. If the recycler actively begins to reclaim the solvent within 24 hours of receipt, a RCRA storage permit is not required. The regeneration process itself is exempt, whether or not the solvent is entirely processed within 24 hours, unless it poses a threat to human health or the environment. The regenerated solvent is a product and not a waste. (See Chapter 10 of this manual.)

Acetone Still Bottoms

Case: Spent acetone, a listed waste, from a fiberglass operation is collected and distilled on-site for reuse. The still bottoms are ground for reuse as a fiberglass putty. What is the regulatory status of the still bottoms?

Analysis: The still bottoms, if they had not been reused, would have been considered to be a listed waste, like the spent acetone from which they were derived. However, if the bottoms are used to make a putty (*i.e.*, a substitute for a commercial product), then they are considered a product, not a waste. The bottoms stop being a waste at the point they are mixed into a putty and used as a product. Management as a waste is required (*e.g.*, accumulation standards) up to the point of using the ground material in the putty. (see Chapter 5 of this manual).

Direct Reuse

Case: A primary smelting facility generates a dry emission control dust containing heavy metals that it collects, stores, and resmelts in the original smelting furnace. What is the regulatory status of the dust?

Analysis: The dust is not a regulated waste because it is directly returned as an ingredient to the original primary process without first being reclaimed. (see Chapter 4 of this manual.)

Antifreeze

Case: Three garages use antifreeze that contains greater than ten percent ethylene glycol and therefore designates as a dangerous waste. One garage drains the antifreeze from radiators and disposes of it into the city sewer system. Another garage collects the antifreeze and recycles it on-site in a batch filtration unit. A third garage sends the antifreeze off-site to a recycler. What is the regulatory status of the spent antifreeze in each case?

Analysis: Since the antifreeze contains more than ten percent ethylene glycol, it is a dangerous waste. In the first case, the antifreeze can only be discharged to the sanitary sewer if the generator has a permit, or complies with the provisions of WAC 173-303-802, Permit by Rule. Permits may be obtained from Publicly Owned Treatment Works which have an approved pretreatment program, or from Ecology's Water Quality Program.

In the second case, where the used antifreeze is collected and recycled in a batch filtration unit, the unit is an exempt recycling operation performing reclamation. The spent antifreeze is a regulated dangerous waste until it enters the unit. Contaminated filters from the unit may designate as regulated hazardous waste by the TCLP or the toxicity criterion. (See Chapter 4 of this manual.)

If the antifreeze is sent off-site for recycling, it is regulated as a dangerous waste and needs to be accumulated, transported, and stored as such prior to reclamation. (See Chapter 10 of this manual.)

Technical Information Memorandum 90-1: Regulation of Used Antifreeze provides Ecology guidance on used antifreeze management. It includes a temporary exemption from counting recycled antifreeze in the calculation of generator quantities.

Household Paint/Household Hazardous Waste

Case: A paint company recycles paint by collecting old, hazardous household paint and reclaiming it to make new paint. What is the regulatory status of the old paint?

Analysis: The collected household paint is not regulated as a hazardous waste, even when it amounts to more than 220 pounds in a month because it is exempt as household hazardous waste. The reclamation process itself is not regulated because the paint is not regulated as a hazardous waste. (See Chapter 2 of this manual).

Used Paint Blended for Resale

Case: A paint manufacturer recycles some of its leftover paint by returning the paint to the original process from which it was generated before reclaiming it. The paint is blended and colored for resale as a primer. What is the regulatory status of the paint before it is recycled?

Analysis: The leftover paint is not regulated. The unused paint returned to the manufacturer to be processed for resale is considered a commercial chemical product.

Sludge Reclamation

Case: A primary smelting facility generates a listed waste water treatment sludge that it dewaters and returns to the original smelting process. What is the regulatory status of the sludge?

Analysis: The sludge is a regulated dangerous waste because it is "listed" and reclaimed (in this case, dewatered). If it was not listed, it would not be a regulated dangerous waste. Characteristic or criteria by-products and sludges and commercial products are secondary materials that are not regulated wastes when reclaimed. (See Chapter 5 of this manual.)

Energy Recovery

Case: A generator burns its hazardous still bottoms for energy recovery. The bottoms are burned in a boiler. What is the regulatory status of the still bottoms?

Analysis: The still bottoms are a regulated hazardous waste because they are burned for energy recover. (See Chapter 5 of this manual.)

Direct Reuse/Land Application

Case: A produce packing house uses unopened bags of lime as a desiccant. When the lime is too moist to be used any more, the bags are shipped to an orchard that uses the lime as a soil amendment. What is the regulatory status of the lime at the packing house? During shipment? At the orchard? Assume the lime designates as a dangerous waste for pH or fish toxicity.

Analysis: The high pH of the spent lime would make it a hazardous waste, if disposed. Even though applied to the land, land application as a commercial fertilizer produced for the general public's use causes the material to be exempt from regulation as a dangerous waste. However, the material must be registered by the Washington Department of Agriculture for such use. (See Chapter 7 of this manual.)

Photographic Wastes/Sewering

Case: A photo processor reclaims silver from its spent photo processing solutions. What is the regulatory status of the spent solutions? Of the waste water leaving the silver recovery unit?

Analysis: Spent photo processor wastes could be dangerous wastes for two reasons:

1. The waste is a TCLP waste because the silver content of the waste exceeds 5.0 ppm of leachable silver; or

2. The waste is a toxic dangerous waste under the state criteria because it fails the fish toxicity test or the oral rat test.

Spent photo processor wastes being processed for silver recovery are subject to the requirements of WAC 173-303-525. After silver recovery, the waste may still be a dangerous waste because of silver content or because of toxicity. This waste may be discharged to the POTW provided the waste is treatable and the generator has a permit from the local pre-treatment program or Ecology's Water Quality Program.

Wash Water Reuse

Case: A door manufacturer generates a wash water containing glue solids. The wash water would designate as a dangerous waste due to its high pH. The wash water is collected and reused to mix fresh glue. What is the regulatory status of the wash water?

Analysis: The wash water is not a regulated dangerous waste because it is being directly reused as an ingredient to make a product and is not reclaimed. (See Chapter 4 of this manual.)

Commercial Product Substitute

Case: A solution of sodium hydroxide containing no contaminants such as heavy metals is generated from a metal cleaning operation. Another facility immediately takes and reuses the waste to clean out tanks. Is the material considered a waste?

Analysis: The material is not a solid waste and therefore not a dangerous waste, since it is recycled by being used, without reclamation, as an effective substitute for a commercial product [see WAC 173-303-017(2)(a)(ii)]. The material does not need to be managed under the Dangerous Waste Regulations. Any waste or residue from the tank cleaning must be designated and managed appropriately. (See Chapter 4 of this manual.)

Lead Acid Batteries

Case: An auto repair shop collects spent lead acid batteries to be shipped back to the manufacturer for reclamation. What are the regulatory requirements for managing the batteries?

Analysis: The material is a dangerous waste and a recyclable material, but it is regulated by specific standards for the management of dangerous waste [see WAC 173-303-120(3)(e) and -520]. It does not need to be managed according to dangerous waste generator and transporter requirements. However, storage and handling by the reclaimer is a regulated activity. (See Chapters 3 and 9 of this manual.)

Discarded "Off-Spec" Commercial Chemical Products

Case: A listed commercial chemical product becomes "off-spec" as a result of an expired shelf life. What requirements apply?

Analysis: If the material is shipped back to the manufacturer for reclamation, it does not need to be managed as a dangerous waste (*e.g.*, accumulation standards, manifesting) since it is not a solid waste. Discarded "off-spec" (or unused) commercial chemical products being reclaimed or accumulated speculatively are not solid wastes and, therefore, are not dangerous wastes. (See Attachment 3 to this manual.)

Waste Exchange Programs / Constituents "Along for the Ride"

Case: Acid from an etching operation is contaminated with heavy metals in concentrations above TCLP levels, is available in a waste exchange program. Another facility wants to use the solution in an elementary neutralization procedure. How should this material be managed?

Analysis: In this case, the solution is not considered an effective substitute for a commercial chemical product because the heavy metal contaminants, which are hazardous constituents "along for the ride." It does not meet the requirement of WAC 173-303-017(2)(a)(ii), and is, therefore, a solid waste and a dangerous waste and must be managed appropriately. (See Chapters 4 and 10 of this manual.)

Chapter Thirteen: Additional Guidance Documents

Technical Information Memoranda (TIMs) are issued by the Hazardous Waste and Toxics Reduction Program to provide additional guidance on the regulations. The following are some TIMs and other guidance related to recycling that may assist you:

"Counting" Exemption for Recycled Used Antifreeze (Focus, March 1993)

Regulation of Used Antifreeze (TIM 90-1)

Used Oil and Determining Generator Status (Memorandum, February 19, 1991)

Update on Used Oil Filters (Regulatory Alert, October 1991)

Counting Spent Solvents and The Closed Loop Exclusion (TIM No. 89-1)

Discussion Paper On Used Oil Burned In Space Heaters (September, 1990)

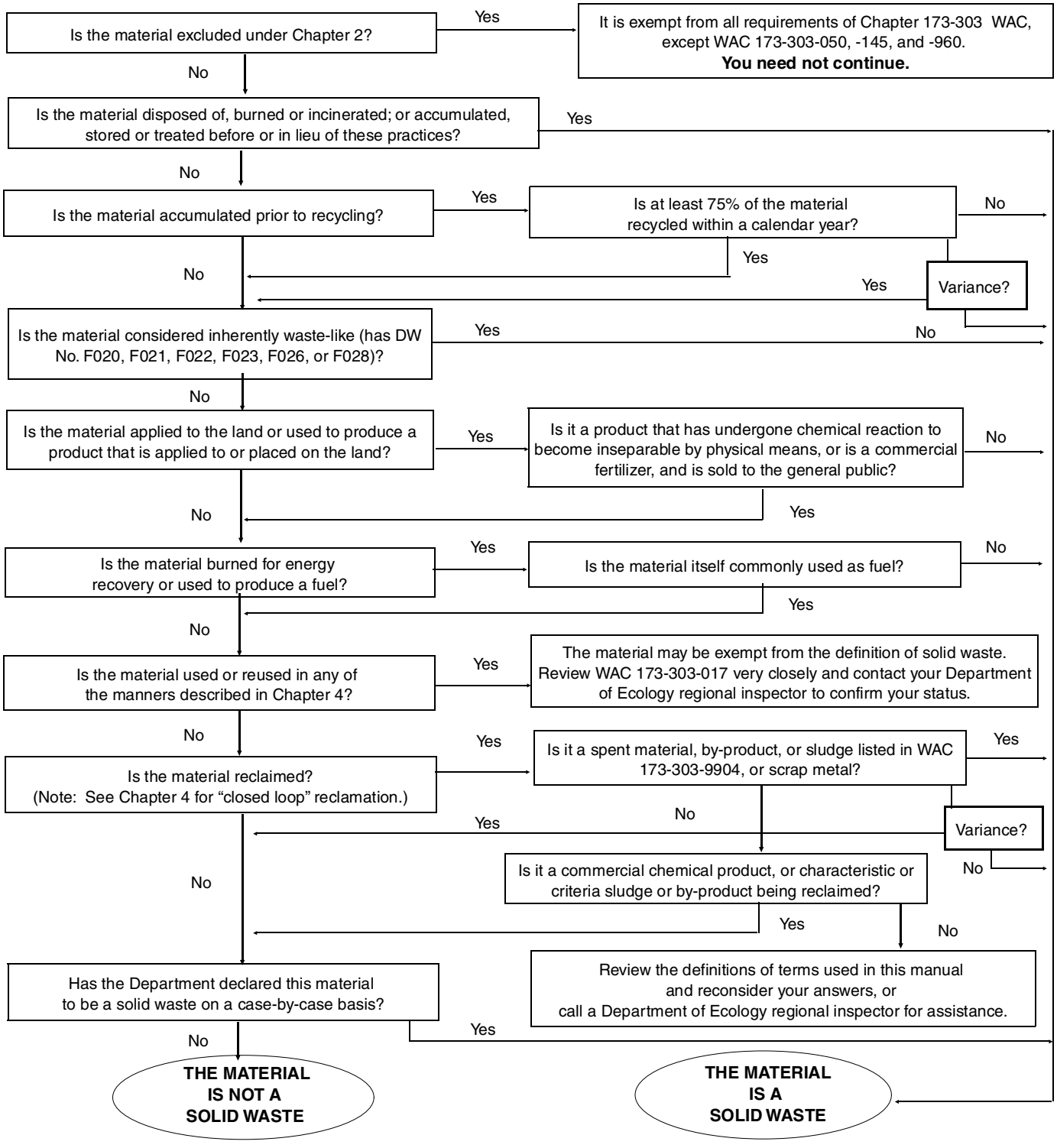
Used Shop Towels (Focus Sheet, August 1991)

Treatment by Generator (TIM No. 86-3)

Guidance on Petition to Delist Dangerous Waste

These TIMs are available from your nearest regional office of the Department of Ecology.

Attachment 1: Flow Chart for the Definition of a Solid Waste



And not regulated under Chapter 173-303 WAC

And a dangerous waste if it designates.

Attachment 2: Examples of Secondary Materials*

Spent Materials	spent solvents	spent foundry sands
	spent activated carbon**	spent lead-acid batteries
	spent catalyts	spent potliners
	spent acids	spent antifreeze
	spent pickle liquor	
Sludges	bag house dusts	
	flue dusts	
	wastewater treatment sludges	
By-Products	distillation column bottoms	
	mining slags	
	drosses	
Scrap Metal	bars	wire
	turnings	radiators
	rods	scrap automobiles
	sheet	railroad box cars
Discarded Commercial Chemical Product	unused commercial chemical products or manufacturing intermediates listed in WAC 173-303-9903	
	off-specification variants of the above substances	
	containers or inner liners from containers used to hold the above substances (unless they have been cleansed in the appropriate manner, see WAC 173-303-160)	
	any residue or contaminated debris from the cleanup of a spill of any of the above substances	

* Taken from *"An Overview of the Definition of Solid Waste,"* Washington State Department of Ecology, 1986 Draft.

** Spent activated carbon is a sludge if it results from pollution control technology.

Attachment 3: Matrix of Which Types of Secondary Materials are Defined as "Solid" (and Potentially Dangerous) Wastes

	RECYCLING METHOD			
Secondary Materials	Use Constituting Disposal	Burning for Energy Recovery, or Used to Produce a Fuel	Reclamation	Speculative Accumulation
Spent materials (listed, characteristic, or criteria)	Yes	Yes	Yes	Yes
Sludges (listed)	Yes	Yes	Yes	Yes
Sludges (characteristic or criteria)	Yes	Yes	**No**	Yes
By-products (listed)	Yes	Yes	Yes	Yes
By-products (Characteristic or criteria)	Yes	Yes	**No**	Yes
Commercial chemical products (that are not ordinarily applied to the land or burned as fuels)	Yes	Yes	**No**	**No**
Scrap metal	Yes	Yes	Yes	Yes

Yes – Defined as a "solid waste"
No – Not defined as a "solid waste"